

WHAT IS CLAIMED IS:

1. A method comprising:
  - (a) acquiring an image pertaining to an organ or structure inside a body; and
  - 5 (b) registering a representation of a probe which is inside the body with the image, the representation of the probe and the image being registered to substantially the same point in a bodily cycle.
2. The method of claim 1, wherein the image was acquired prior to the probe being located inside the body.
- 10 3. The method of claim 1, further comprising simultaneously displaying the registered representation of the probe and the registered image.
4. The method of claim 1, wherein the organ or structure inside the body comprises a heart and the bodily cycle is a cardiac cycle.
5. The method of claim 1, wherein the image is at least a three  
15 dimensional image.
6. The method of claim 1, wherein the image is acquired using computed tomography, magnetic resonance, and/or ultrasound.
7. The method of claim 1, further comprising spatially registering the representation of the probe with the image.
- 20 8. A method comprising:
  - acquiring an image pertaining to an organ or structure inside a body;
  - simultaneously displaying the image and a representation of a probe,
  - the image and the representation of the probe corresponding to substantially the same point in a bodily cycle.
- 25 9. The method of claim 8, further comprising spatially registering the representation of the probe with the image.

10. The method of claim 8, wherein the image is acquired using computed tomography, magnetic resonance, and/or ultrasound.

11. The method of claim 8, wherein the organ or structure inside the body comprises a heart and the bodily cycle is a cardiac cycle.

12. The method of claim 8, wherein the probe is configured to sense the electrical properties of the organ or structure inside the body.

13. The method of claim 8, wherein the image was acquired prior to the probe being located inside the body.

14. The method of claim 8, wherein the acquiring step comprises storing the image on a computer readable medium.

15. A method comprising:  
generating an image of an organ or structure inside a body which is substantially correlated to a point in a bodily cycle, the image being generated by interpolating between and/or extrapolating from at least two other images of the organ or structure taken at other points of the bodily cycle;  
registering a representation of a probe which is inside the body with the image, the representation of the probe and the image being registered to the point in the bodily cycle.

16. The method of claim 15, further comprising spatially registering a representation of the probe with the image.

17. The method of claim 15, wherein the organ or structure inside the body comprises a heart, the method further comprising simultaneously displaying the registered image, the registered representation of the probe, and a map of electrical properties of the heart.

18. The method of claim 15, wherein the organ or structure comprises a heart and the bodily cycle is a cardiac cycle.

19. The method of claim 15, wherein the image is acquired using computed tomography, magnetic resonance, and/or ultrasound.

20. A system comprising;  
memory configured to store an image of an organ or structure of a  
5 body;  
a display configured to simultaneously display a representation of a probe which is in or adjacent to the organ or structure of the body and the image, the representation of the probe being registered with the image at substantially the same point in a bodily cycle.

10 21. The system of claim 20, wherein the organ or structure of the body comprises a heart and the bodily cycle is a cardiac cycle.

22. The system of claim 21, wherein the display is configured to simultaneously display a map of electrical properties of the heart in conjunction with the image and the representation of the probe.

15 23. The system of claim 21, wherein the display is configured to simultaneously display electrical properties of the heart for at least one location of the probe in conjunction with the image and the representation of the probe.

24. The system of claim 20, wherein the image is at least a three dimensional image.

20 25. The system of claim 20, wherein the image comprises one or more images acquired using computed tomography, magnetic resonance, and/or ultrasound.

26. The system of claim 20, wherein the representation of the probe is spatially registered with the image.

25 27. The system of claim 20, wherein the system is an electrophysiology monitoring system.